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Decision processes in military moral dilemmas:

The role of moral intensity and moral judgment

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In conducting the research described in this report, the investigators adhered to the policies and procedures set out in the Tri-Council Policy Statement: Ethical conduct for research involving humans, National Council on Ethics in Human Research, Ottawa, 1998 as issued jointly by the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council of Canada and the Social Sciences and Humanities Research Council of Canada.

Abstract

Given the unique moral responsibility and obligations of military duty, understanding the nature and factors governing the moral decision making process and behaviour of military personnel, especially during operations, is of paramount importance. In the current study, we apply the seminal moral and ethical decision making models of Rest (1986) and Jones (1991) to explore the moral decision making process of 64 participants (34 women and 30 men) who participated in an on-line survey at the Center for Decision Sciences at Columbia University. Following the presentation of each of two military moral dilemmas drawn from the operational experiences of senior Canadian Forces (CF) commanders and two potential responses to that dilemma, the participants responded to a series of questions assessing moral awareness, intensity, and judgment for each of the response options. They also selected a preferred response option for each military moral dilemma. Our results showed that they were no more likely to choose one response option over the other in either moral dilemma. The results of regression analyses also showed that differences in how the participants perceived one option as compared to the other on the moral intensity variables predicted how they judged its morality relative to that of the other option. Finally, the results of hierarchical regression analyses indicated that the differences in moral intensity ratings and judgment scores were significant predictors of the preferred responses to the moral dilemmas, although the differences in moral judgment scores were more consistent predictors of choice than were the differences in intensity ratings. We conclude with a discussion of the implications of these results and provide suggestions for future research in the area.

Résumé

Vu la responsabilité et les obligations morales uniques qu'implique le service militaire, il est indispensable de comprendre les fondements et les facteurs de la prise de décision morale et du comportement du personnel militaire, particulièrement dans le contexte des opérations. Durant cette étude, nous appliquons les modèles pertinents de prise de décision morale et éthique de Rest (1986) et de Jones (1991) pour explorer le processus de la prise de décision morale. Soixante-quatre participants (34 femmes et 30 hommes) ont collaboré à une enquête administrée en direct au Centre for Decision Sciences de l'Université Columbia. Après la présentation de deux dilemmes moraux tirés de l'expérience opérationnelle de commandants supérieurs des FC et de deux options d'intervention possibles face à chaque dilemme, les participants ont répondu à une série de questions visant à évaluer leur conscience morale, intensité morale et jugement moral par rapport à chacune des options d'intervention. Ils ont également choisi une option privilégiée d'intervention pour chaque dilemme moral militaire. Les résultats indiquent que les participants n'ont pas eu plus tendance à choisir une option d'intervention plutôt qu'une autre pour l'un ou l'autre des dilemmes moraux. Selon les analyses de régression, la façon dont les participants percevaient une option comparativement à l'autre (c.-à-d., d'une manière plus positive ou plus négative) sur l'échelle de l'intensité morale avait une corrélation significative avec leur jugement par rapport à sa moralité, relativement à la moralité de l'autre option, particulièrement dans le cas du consensus social. Enfin, les résultats des analyses de régression hiérarchique explorant l'apport relatif des évaluations de l'intensité morale et du jugement moral à la sélection des options indiquent que les différences au niveau de l'intensité morale et du jugement moral avaient un rôle

à jouer dans la réaction choisie face aux dilemmes moraux, même si la différence au niveau de l'évaluation du jugement moral était une variable explicative plus stable du choix effectué. Pour conclure, on discute de la portée de ces résultats et l'on propose des sujets de recherches connexes ultérieures.

Executive summary

Decision Processes in Military Moral Dilemmas: The Role of Moral Intensity and Moral Judgment:

Ann-Renee Blais; Megan M. Thompson; DRDC Toronto TR 2008-190; Defence R&D Canada – Toronto; December 2008.

Background: The nature of military operations means that many military personnel will make moral decisions including those with life and death implications for themselves, their comrades and for their adversaries. Indeed, "[w]hat makes the military profession unique is that it is sanctioned to exercise on behalf of the client-state the ultimate powers of destruction" (Davenport, 1997) and it is for this very reason that "the military has a unique obligation to be constrained by moral integrity and competence" (Davenport, 1997). Given their special status, responsibility, and obligations, understanding the nature and factors governing the moral decision making and behaviour of military personnel, especially during operations, is of paramount importance.

The Current Study: We apply the seminal moral and ethical decision making models of Rest (1986) and Jones (1991) concerning the moral awareness, intensity, and judgment dimensions to explore moral decision making processes. More specifically, we sought to determine whether and how individuals' perceived moral intensity (i.e., probability of effect, magnitude of consequences, and social consensus) and judgment concerning two response options guide their choice of the preferred response to two military moral dilemmas (i.e., private reprimand vs. court-martial of a subordinate officer; letting refugees into a military camp vs. turning them away). To foreshadow, we hypothesize that the differences between the moral intensity ratings associated with each response option should have an influence on the subsequent response selection. Similarly, the differences between the moral judgment scores of the two response options should also predict the selection of a response option.

Participants and Procedure: Sixty-four participants (34 women and 30 men) participated in an on-line survey at the Center for Decision Sciences at Columbia University. Following the presentation of each of two military moral dilemmas drawn from the operational experiences of senior Canadian Forces (CF) commanders, as well as that of potential response options to that dilemma, the participants responded to a series of questions assessing moral awareness, intensity, and judgment for each of the response options. They also selected a preferred response option for each military moral dilemma.

Results: Our participants were no more likely to choose the private reprimand over the court martial as their preferred, or most likely, response to the moral dilemma. Similarly, there was no significant difference between the percentages of respondents who selected turning the refugees away from those respondents who indicated their preferred response would be to let the refugees into the military camp. The fact that there was no clear preferred moral choice to these dilemmas perhaps most evocatively reflects the complex nature of moral dilemmas and moral decision making.

Concerning the disobedient subordinate dilemma, although the participants rated the probability of effect and magnitude of consequences as somewhat greater in the case of a court martial, they

felt the private reprimand was a less socially acceptable, and a somewhat less moral, choice. With respect to the moral dilemma concerning the war refugees, our results indicated that the option of letting the refugees into the camp was associated with significantly lower magnitude of consequences and social consensus (i.e., more appropriate), and significantly greater moral judgment than was the option of turning the refugees away from the camp. It was also associated with a somewhat lower probability of effect than was turning the refugees away, but this effect failed to reach statistical significance.

The results of regression analyses showed that the differences in the respondents' ratings of the moral intensity dimensions were indeed related to the differences in their judgments of the morality of the options, and this was true for both moral dilemmas. In other words, how the participants perceived one option as compared to the other on the moral intensity variables was significantly related with how they judged its overall morality relative to the morality of the other option. More specifically, the less socially appropriate the respondents rated the private reprimand option relative to the court martial option, the lower they judged its morality relative to the court martial option. Similar results were evident in the refugees dilemma. However, in this case, the difference between the ratings of the magnitude of consequences occurring should the refugees be turned away versus being let into the camp was also significantly associated with their difference in morality ratings.

Finally, the results of hierarchical regression analyses indicated that the differences in moral intensity ratings and judgment scores between the options were significant predictors of the choice of the preferred response to the moral dilemmas, although the difference in moral judgment ratings was a more consistent predictor of choice than were the differences in moral intensity ratings. In summary then, our analyses generally supported our contention that how the participants perceived one option as compared to the other in terms of moral intensity and morality was significantly related to whether they chose that option over the other.

Conclusion: Asymmetrical threats, the comprehensive approach to operations, and the increasing recognition that the actions of even junior enlisted personnel can have significant strategic effects (Liddy, 2005) are all evidence of the increasing complexity of modern military missions. These factors can also increase the likelihood that CF personnel may encounter ethical dilemmas. Even greater skills in judgment, decision making, communication, and action will be required for military personnel at all levels to effectively address these dilemmas. We believe that research such as that conducted in the current study will be increasingly important in understanding ethical decision making in military operations.

Sommaire

Decision Processes in Military Moral Dilemmas: The Role of Moral Intensity and Moral Judgment:

Ann-Renee Blais; Megan M. Thompson; DRDC Toronto TR 2008-190; R & D pour la défense Canada – Toronto; Décembre 2008.

Contexte : La nature des opérations miliaires est telle que de nombreux membres du personnel militaire seront appelés à prendre des décisions d'ordre moral, y compris des décisions ayant des répercussions de vie ou de mort pour eux-mêmes, leurs confrères et leurs adversaires. En fait, « la profession militaire est unique parce que ceux qui l'exercent ont la sanction d'appliquer pour le compte de l'État-client les pouvoirs de destruction ultime » (Davenport, 1997) et c'est pour cette raison que « la force militaire a l'obligation unique d'être contrainte par l'intégrité et la compétence morales » (Davenport). Étant donné le statut, les responsabilités et les obligations particuliers des militaires, il est d'importance capitale de comprendre les fondements et les facteurs qui régissent leurs décisions et leur conduite morales, en particulier durant les opérations

Étude : Nous avons appliqué les modèles pertinents de prise de décision morale et éthique de Rest (1986) et de Jones (1991) concernant les dimensions de la conscience morale, de l'intensité morale et du jugement moral afin d'explorer le processus de prise de décision éthique. Plus précisément, nous avons cherché à déterminer dans quelle mesure la sensibilité/conscience morale, l'intensité morale (c.-à-d., la probabilité des effets, l'ampleur des conséquences et le consensus social) et le jugement moral perçus concernant deux options d'intervention orientent le choix des interventions privilégiées devant deux dilemmes moraux militaires (la réprimande en privé ou la convocation en cour martiale d'un officier subordonné; admettre des réfugiés dans un camp militaire ou leur refuser l'accès). Nous sommes partis de l'hypothèse que de plus grandes différences entre l'évaluation d'intensité morale associée à chaque option d'intervention exerceraient une plus grande influence sur le choix de l'intervention. Dans le même ordre d'idées, de plus grandes différences entre les évaluations de jugement moral à l'égard des deux options devraient aussi prévoir le choix d'intervention.

Participants et procédure : Soixante-quatre participants (34 femmes et 30 hommes) ont collaboré à une enquête administrée en direct au Centre for Décision Sciences de l'Université Columbia. Après la présentation de deux dilemmes moraux tirés de l'expérience opérationnelle de commandants supérieurs des FC et de deux options d'intervention possibles face à chaque dilemme, les participants ont répondu à une série de questions visant à évaluer leur conscience morale, intensité morale et jugement moral par rapport à chacune des options d'intervention. Ils ont également choisi une option privilégiée d'intervention pour chaque dilemme moral militaire.

Résultats : Dans l'ensemble, les répondants n'ont pas eu plus tendance à choisir la réprimande privée que la cour martiale comme intervention privilégiée. De même, on n'a relevé aucune différence entre le pourcentage des répondants qui ont choisi de refuser l'accès aux réfugiés et la proportion de ceux qui ont indiqué que leur intervention privilégiée serait d'admettre les réfugiés dans le camp militaire. Le fait qu'il n'y avait aucun choix moral privilégié clair devant ces dilemmes témoigne peut-être avec le plus d'éloquence de la complexité que posent les dilemmes moraux et la prise de décision morale.

Nous avons ensuite exploré la nature et le type des évaluations d'intensité morale et de jugement moral pour les deux options d'intervention associées à chacun des deux dilemmes moraux militaires. En ce qui concerne le dilemme du subordonné en défaut, même si les participants ont évalué l'ampleur des conséquences et la probabilité de réalisation de ces effets négatifs comme supérieurs pour l'option d'une cour martiale, ils étaient d'avis que la réprimande privée était moins acceptable du point de vue social (plus faible consensus social) et constituait en quelque sorte un choix moins moral. Pour ce qui est du dilemme moral concernant les réfugiés de guerre, les résultats montrent que l'option d'admettre les réfugiés dans le camp était associée à une bien plus faible échelle de conséquences (négatives), à un consensus social supérieur (c.-à-d., plus acceptable du point de vue social) et à un jugement moral moyen nettement plus élevé que la solution de refuser l'accès au camp. Cette option était également associée à une probabilité d'effets (négatifs) légèrement inférieure à celle de l'interdiction d'accès aux réfugiés, même si cet effet n'était pas significatif du point de vue statistique.

Les résultats des analyses de régression indiquent que les différences dans les évaluations par les répondants des dimensions de l'intensité morale étaient effectivement liées à leur jugement de la moralité de l'option privilégiée, et cela vaut pour les deux dilemmes moraux. Autrement dit, la façon dont les participants percevaient une option comparativement à l'autre (c.-à-d., d'une manière plus positive ou plus négative) sur l'échelle de l'intensité morale avait une corrélation significative avec leur jugement par rapport à sa moralité générale, relativement à la moralité de l'autre option. Plus spécifiquement, les résultats de la régression ont révélé que, parmi les dimensions de l'intensité morale, le consensus social était la dimension qui influençait fortement les jugements concernant la moralité de l'option. Ainsi, les répondants qui ont évalué l'option de la réprimande privée la moins appropriée du point de vue social (le plus faible consensus social) étaient ceux qui en jugeaient la moralité la plus faible. Des résultats semblables concernant l'influence des différences en matière de consensus social sont aussi ressortis de l'analyse du dilemme relatif aux réfugiés. Cependant, dans le cas qui nous intéresse, les différences entre les évaluations de la probabilité de la réalisation d'effets (négatifs) si les réfugiés étaient refusés plutôt qu'admis dans le camp étaient également associées de manière significative aux jugements portés à l'égard de la moralité de cette option.

Enfin, les résultats des analyses de régression hiérarchique explorant l'apport relatif des évaluations de la conscience morale et de l'intensité morale à la sélection des options indiquent que les différences au niveau de l'intensité morale et du jugement moral avaient un rôle à jouer dans la réaction choisie face aux dilemmes moraux, même si la différence au niveau de l'évaluation du jugement moral était une variable explicative plus stable du choix effectué. Bref, nos analyses ont en général appuyé notre allégation selon laquelle, pour les deux dilemmes moraux militaires, les différences quant à la perception des participants à l'égard d'une option comparativement à l'autre pour ce qui est de l'intensité morale et de la moralité (c.-à-d., le jugement moral) avaient une corrélation significative avec le choix d'une option plutôt qu'une autre.

Conclusion : Les menaces asymétriques, l'approche globale face aux opérations et la reconnaissance croissante que les interventions des soldats même les moins expérimentés peuvent avoir des effets stratégiques significatifs (Liddy, 2005) sont toutes des preuves de l'augmentation de la complexité des missions militaires modernes. Ces facteurs peuvent également hausser la probabilité que les effectifs des FC soient confrontés à des dilemmes moraux. Le personnel militaire à tous les niveaux aura besoin d'habiletés encore supérieures en matière de jugement, de

prise de décision, de communication et d'intervention pour se montrer à la hauteur de ces situations. À notre avis, la recherche comme celle réalisée dans le cadre de cette étude sera de plus en plus importante pour la compréhension de la prise de décision morale dans le contexte des opérations militaires.

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1 Introduction

1.1 Background

The fundamental nature of morality is that it concerns, or has a bearing on, the interests or well-being of others. Thus, moral issues are matters or questions that bear on the interest or well-being of others, and moral agents are those people whose actions will have an effect on a moral issue, whether or not they realize they are addressing a moral issue (Jones, 1991). Moreover,

> *Humans evaluate their actions and themselves as good or bad and, as a consequence, experience a distinctive emotion whenever they behave in ways that are inconsistent with their understanding of the way a good person behaves. These two properties define the human moral sense … Although all humans possess a moral sense, they [can] differ in the acts, thoughts, and feelings they judge as good or bad.* (Kagan, 2001, p. 1).

As Kagan eloquently describes it, the ability to consider the actions that we take with respect to their impact on others constitutes the uniquely human moral sense. He also evocatively describes the personal consequences when we believe that we have failed to act in ways that are consistent with that moral sense. Finally, he astutely relates many of the differences in the decision making process that can lead different people to make vastly different judgments concerning what is right or wrong, good or bad, and the actions they take in response to this decision making process.

While deployed in operations, many military personnel make fundamentally moral decisions including those with life and death implications for themselves, their comrades and for their adversaries. Indeed, "[w]hat makes the military profession unique is that it is sanctioned to exercise on behalf of the client-state the ultimate powers of destruction" (Davenport, 1997) and it is for this very reason that "the military has a unique obligation to be constrained by moral integrity and competence" (Davenport, 1997). Moreover, "[t]he monopoly on the use of force entrusted to the armed forces by the state increasingly applied beyond the national borders implies that moral judgment has become an integral part of the military profession" (Verweij, Hofhuis, & Soeters, 2007, p. 20). These operational realities were the impetus for an applied research program (ARP) from Defence Research and Development Canada (DRDC) Toronto *Moral and Ethical Decision making in CF Operations* (Project Code16re02). This work was intended to support the Defence Ethics Program's (DEP) efforts and mandate "to foster the practice of ethics in the workplace and in operations such that members of the Canadian Forces (CF) and employees of the Department of National Defence (DND) will consistently perform their duties to the highest ethical standards" (DEP website, October 22, 2008).

The research we summarize in this report reflects a line of laboratory investigation concerning moral and ethical decision making processes that our team conducted under the auspices of the overall Moral and Ethical Decision Making in CF Operations ARP. We designed it to explore the concepts of interest with greater experimental control than is possible in the interview or field studies that complete the methodological approaches utilized in the ARP. Our initial laboratory work explored individual differences in moral principles in ethical decision making (Blais & Thompson, 2008). In that study, our participants indicated their perception of the extent to which

different moral principles (e.g., care-, virtue-, self-interest-, consequence-, and rule-based moral principles) were implicated in their assessment of two responses to a written moral dilemma. Of the individual difference variables assessed in that study, age was a significant predictor of moral principle preference, with older adults being more likely to use virtue- and care-based principles to guide their choice of a response to moral dilemmas than were younger adults. Gender was not significantly associated with moral principle selection.

In the current research, we continue to investigate the factors that influence military moral decision making. However, here we turn our attention to the moral decision making process, in particular, exploring the seminal contributions of Rest (1986) and Jones (1991) in this area. More specifically, we sought to determine whether and how the moral intensity dimensions of probability of effect, magnitude of consequences, and social consensus (Jones) and the morality (Jones, Rest) associated with two response options would guide the choice of a response to a moral dilemma. To foreshadow, we hypothesize that the differences between the moral intensity ratings associated with each response option should have an influence on the subsequent response selection. Similarly, the difference between the moralities of the two response options should also predict response option selection. We begin with brief reviews of the models of Rest and Jones, focusing on those model components that we specifically addressed in the current research.

Rest's (1986) Four Component Model of Individual Ethical Decision Making

Rest (1986) integrated a vast literature on ethical decision making, consequently proposing an innovative model of the moral and ethical decision making process that involved four components: Moral Sensitivity, Moral Judgment, Moral Motivation, and Moral Character.
As indicated in Figure 1, Rest made no presumptions of temporal placement concerning the components of his model. Rather, his model is conceptualized "as multidimensional processes that facilitate moral development and subsequently promote moral behaviour" (Morton, Worthley, Testerman, & Mahoney, 2006, p. 387). Theoretically then, each component affects the ultimate decision to act in an ethical manner, and there are interactions and feedback loops among all the components.

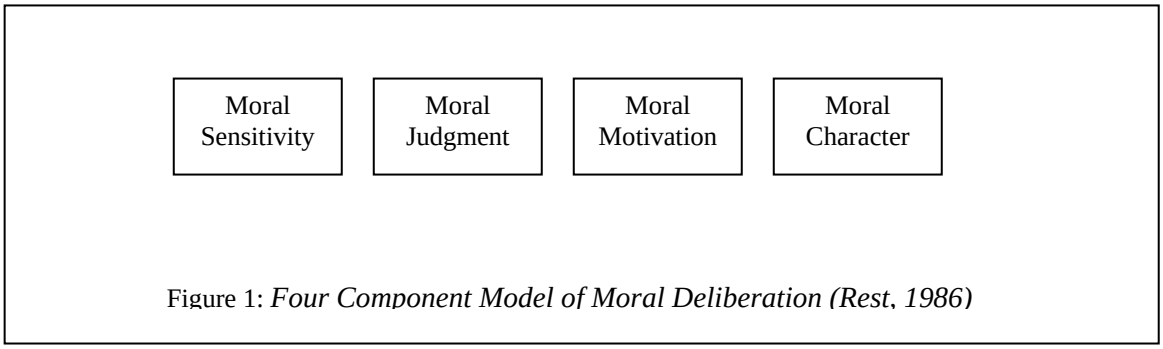

Figure 1: *Four Component Model of Moral Deliberation (Rest, 1986)*

Moral Sensitivity/Moral Awareness

One component of this model is the perceiver's awareness of, or sensitivity to, moral issues, that is, the perceiver's *moral sensitivity* or *moral awareness* (see also Butterfield, Trevino, & Weaver, 2000). This component encompasses all aspects of attention/perception/ recognition prior to the

deliberation of what to do (see Blum, 1991). Here, the individual must realize that his or her own actions will have consequences for others (usually involving some kind of harm; Butterfield et al.), and he or she must also believe that he or she has volitional control or choice in the situation (Rest, 1986). Moral awareness activates the perceiver's attentiveness to the moral aspects of the issue, and his or her consciousness that issues of right and wrong are at play. This is fundamental as "[w]ithout the ability to recognize moral issues in complex situations, it is unlikely that an individual will incorporate these issues into decision making…" (Jordan, 2007, p. 325).

Not surprisingly, individual differences also play a role in moral sensitivity/awareness (Reynolds, 2006). For instance, people who are prone to avoid or blunt unpleasant situations or emotions (i.e., repressors, Fiske & Taylor, 1991) have a higher threshold before moral awareness becomes activated, while sensitizers (those individuals who are attuned and responsive to emotionally unpleasant situations) have a lower moral awareness threshold (Jones, 1991). Similarly, those people who possess an internal locus of control (Rotter, 1966), that is, those people who believe they have greater control over events, should also possess a lower threshold for moral awareness than would externals, who believe that they have less control over the events that occur around them. Other research suggests that there is also a crucial interplay between social factors and individual differences in moral awareness (e.g., VanSandt, Shepard, & Zappe, 2006).

Moral Judgment

A second component of Rest's (1986) model is the perceiver's ability to generate and judge the inherent goodness or badness, rightness or wrongness (i.e., the morality) of each potential response option associated with the moral situation. Consistent with Rest's theory, judgments of morality differ between people who ascribe greater or lower moral relevance to the available response options (Bartels, 2008). Moral judgments have been linked to subsequent moral choices through the integration of affective and cognitive processes (Cushman, Young, & Hauser, 2006). Similarly, Damon and Colby (1987) contend that moral judgment occurs through the regulating of emotions while synthesizing multiple moral viewpoints and principles (see also Morton et al., 2006). Recent functional magnetic resonance imaging (fMRI) studies have supported the influence of both affective and reasoning brain centers in moral decision making (e.g., Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Prehn, Wartenburger, Mériau, Scheibe, Goodenough, Villringer, van der Meer, & Heekeren, 2008).

Kolberg's (1969; 1981) stage theory of moral development has predominated the research on moral judgment. This model links moral development to cognitive maturation and is developmental, progressive, invariant, and non-regressive, although there may exist differences in the final level of moral judgment stage that an individual attains.[1] Most of the ensuing research has been associated with those individual differences that are most associated with the stage of moral development, especially age (e.g., Crain, 1985; Harris, 1990; Mason & Mudrack, 1996; Ruegger & King, 1992), which is directly predicted by the theory, and sex, which was not originally assumed to play a role, but which continues to be a contentious and highly debated topic in the literature (e.g., Gilligan, 1982; Gilligan & Wiggins, 1988; Glover, 2001).

[1] The stages proceed from one in which morality is based on 1) obedience to authority, through 2) personal interest/egoism and exchange, 3) interpersonal harmony, 4) laws and duty to the social order, 5) the morality of social consensus, and 6) ultimately on rational and deliberate social cooperation in which moral behavior is tied to universal moral principles (Rest & Narváez, 1994).

Despite the real contributions of stage theories and the resultant empirical focus on moral judgement per se, the research literature reveals that moral judgment scores explain only about 10–15% of the variance in moral-related behavior (Blasi, 1980; Jordan, 2007; Thoma, Rest, & Davison, 1991), supporting the development and use of larger component models and the notion that the process of moral and ethical decision making is multi-determined.

Moral Motivation and Moral Character

Moral Motivation and Moral Character are the final two components that comprise Rest's (1986) model. Because we did not assess these components in our study, we only briefly summarize them here. Moral motivation refers to one's hierarchical ordering of response options in terms of which one is the most morally justifiable and to one's resolve to give to moral concerns a higher priority than to other individual concerns (Jones, 1991; Morton et al., 2006; Rest, 1986). Other scholars have defined moral motivation as how deeply moral values are associated with identity and identity formation, particularly in terms of a professional identity with respect to a specific code of ethics (Bebeau, 2002).

The fourth component, moral character, is acting, or the behavioral intention to act, in a moral manner, and persistence in that moral behavior in the face of obstacles (Morton et al., 2006; see also Rest, 1986, Rest & Narváez, 1994). Although it is arguably the most objective measure of moral decision making, for a variety of practical and ethical reasons, research has rarely addressed actual behaviors in the moral decision making process. Rather, when the behavioral component is addressed, it largely involves people indicating their behavioral intentions or their most likely action in response to written scenarios or vignettes.

Overall then, Rest (1986) proposed an innovative and useful model to begin to conceptualize the individual ethical decision making process. While other researchers have suggested that moral sensitivity or moral awareness is a necessary precursor of moral judgment (e.g., Clarkeburn, 2002; Sparks & Hunt, 1998), Rest and others have noted that empirical results reveal that only a moderate relation exits among components (e.g., Bebeau, Rest, & Yamoor, 1985; Rest, Narváez, Bebeau, & Thoma, 1999; Morton et al., 2006) leading them to conclude that the relationship between the components of the model is indeed complex and recursive.

Moral Intensity

Jones' (1991) Issue-Contingent Model of Moral Decision Making provided an additional major, innovative, and integrative influence to thinking about the moral and ethical decision making process. This model is integrative in that it captures the main points of previous ethical decision making models. More importantly, it was innovative in its recognition of the influence of the multiple characteristics that are associated with the ethical *situation* itself, which are termed the dimensions of moral intensity. These dimensions represent the characteristics of an issue itself that constitute the moral imperative or impetus the person experiences in the situation (Morris & McDonald, 1995). As presented in Figure 2, moral intensity is a multidimensional construct that influences each stage of the moral decision making process. Moreover, the dimensions of moral intensity interact with each other as well as with other variables (Jones, 1991).

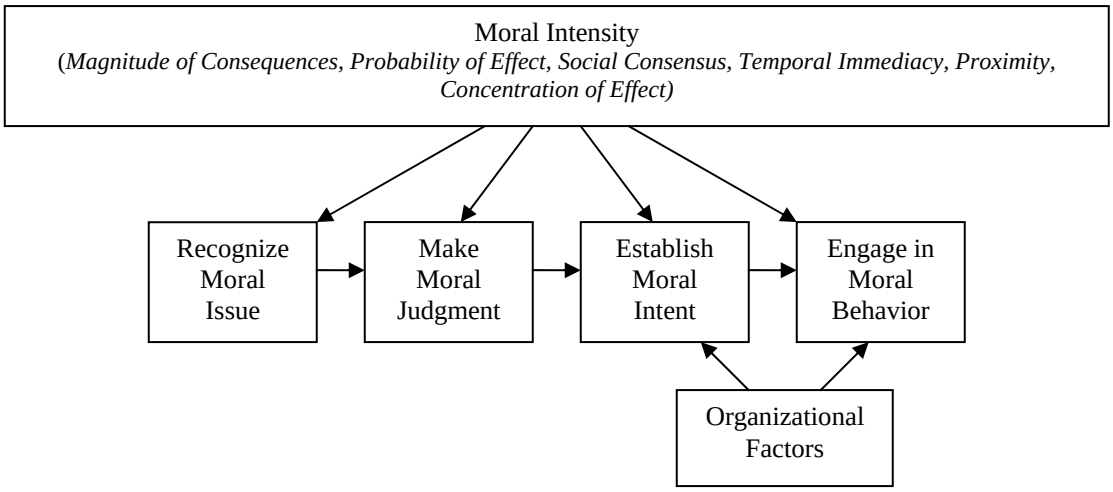

Figure 2: *The Issue-Contingent Model of Ethical Decision Making (Jones, 1991)*

Jones (1991) proposed that six characteristics collectively comprise moral intensity: (1) *Magnitude of Consequences* is the sum of all of the harm or benefits to the recipient(s) of the moral act, (2) *Probability of Effect* refers to the likelihood that the event actually will take place and will cause the harm or benefit predicted, (3) *Proximity* refers to the social, cultural, physical, or psychological feeling of nearness to the victims/beneficiaries of the moral act in question, (4) *Temporal Immediacy* involves the length of time between the present and the anticipated onset of the moral act, (5) *Social Consensus* is the degree of social agreement that a proposed act is good or evil, and finally, (6) *Concentration of Effect* is defined as an inverse function of the number of people affected by an act of a given magnitude (e.g., cheating an individual or small group of persons out of a given sum of money has a more concentrated effect than cheating an institutional entity, such as a corporation or government agency, out of the same sum of money). According to Jones' model, "[a]s the moral intensity of a situation increases, awareness of the ethical nature of the situation should increase; judgments regarding the appropriate action to be taken in the situation should lean more toward ethical action; behavioral intention should be to act in a more ethical manner; and behavior should be more ethical" (McMahon & Harvey, 2006, p. 352). While influential on their own, these characteristics interact with each other as well as with other variables such as individual level of moral development (Jones, 1991).

The notion of moral intensity has stimulated a great deal of empirical research (see May & Pauli, 2002 for a summary), which has shown that, although not always equally impactful, moral intensity dimensions do indeed affect responses at all stages of the moral and ethical decision making process (e.g., Barnett, 2001; Leitsch, 2006; Morris & McDonald, 1995; McMahon & Harvey, 2006; Singer, Mitchell, & Turner, 1998; Singhapakdi, Vitell, and Kraft, 1996; Tsalikis, Seaton, & Shepherd, 2008). Further, research has shown that, across studies, Magnitude of Consequences and Social Consensus are among the most consistent factors affecting moral judgments (e.g., Singer, 1998; see also Jaffe & Pasternak, 2006).

Hypotheses

1. Following directly from the moral sensitivity/moral awareness literature, moral decision making dilemmas will trigger greater moral awareness ratings than will non-moral decisions.

Moreover, we integrate the larger moral decision making process with the more specific analyses of Bartels (2008) who found individual differences in people's judgments of morality based upon the extent to which they ascribed greater or less moral relevance to the available response options.

2. Accordingly, we predict that differences in ratings of moral intensity (i.e., magnitude of consequences, probability of effect, and social consensus) between two response options will impact on the final selection of a response to a moral dilemma.

3. Similarly, we predict that differences in ratings of morality (i.e., moral judgment) between two response options will impact on the final selection of a response to a moral dilemma.

2 Method

2.1 Participants

Our contractors at Columbia University, New York City, recruited participants using flyers distributed across campus as well as the on-line recruiting system of their Center for the Decision Sciences and admitted participants to the study on a first-come, first-served basis. They advertised the study as a one-hour "real-world decision making" computer-based study, for the completion of which participants would receive $15 (US). Sixty-four participants (34 women and 30 men) over the age of 18 completed the study.

2.2 Materials

The current analyses focused on four decision situations (i.e., two non-moral scenarios and two military moral dilemmas) in collaboration with our contractors at Columbia University. Each decision described a situation and offered a choice between two courses of actions. In particular, the two non-ethical decisions had to do with choosing between two brands of toothpaste and between two outdoor activities and were simple, mundane everyday-type decisions designed to convey little moral content and, essentially, to act as "control" decisions (see Appendix A). We based the two ethical dilemmas on the results of an in-depth interview study (Thomson, Adams, & Sartori, 2005), in which senior Canadian military commanders provided detailed accounts of operational experiences in which they confronted and made decisions that involved moral and ethical dilemmas. One of the military ethical dilemmas had to do with how to reprimand a subordinate for a risky operational decision and the other, with how to handle refugees (see Appendix B).

For each of the two choice options accompanying each of the decision scenarios, the participants assessed three components of *moral intensity* using three items (see Appendix C) that tapped into the dimensions of *probability of effect* ("The probability of any negative consequences occurring as a result of this option are…"), *magnitude of consequences* ("The possibility of harm resulting from this option would be…"), and *social consensus* ("Most people would consider this option to be…"), respectively (Dursun & Morrow, 2003, based on Singhapakdi et al., 1996). The 7-point Likert-type rating scales ranged from, respectively, *Not at all likely* to *Very likely*, *Minor* to *Severe*, and *Appropriate* to *Inappropriate*. We selected these dimensions because previous research has shown that they are among the most consistent factors affecting judgments of morality (e.g., Singer, 1998; see also Jaffe & Pasternak, 2006).

The participants also judged the *morality* of each option on a 7-point, eight-item semantic-differential measure (see Appendix C; also see Reidenbach & Robin, 1990), responding to the question/statement "How well do the following characteristics describe this option." The aspects rated included: *Just, Right, Fair, Morally Right, Acceptable to my family, Culturally acceptable, Traditionally acceptable, Does not violate an unspoken promise,* and *Does not violate an unwritten contract.* Although some researchers have questioned the psychometric properties of this measure (McMahon & Harvey, 2006), its overall score has shown adequate internal consistency reliabilities across various studies (i.e., in the .70 to .90 range; Reidenbach & Robin, 1990).

The participants also indicated their *moral awareness* by rating the extent to which the dilemma *as a whole* involved ethical and moral considerations (i.e., "To what extent does this decision involve ethics and morality?") on a single 7-point Likert-type rating scale ranging from *Not at all* to *Very much* (see Appendix C).[2] All procedures and materials were reviewed and approved in accordance with the policies of the Institutional Review Boards of Columbia University and the Human Research Ethics Committee of Defence Research and Development Canada.

2.3 Design and procedure

The participants took part in the study individually and privately on personal computers at the Center for the Decision Sciences at Columbia University. The experimenter briefly introduced them to this "real-world decision making study" and told them they would see several decision situations, each followed by a series of questions. The experimenter asked them to carefully read each decision situation and to do their best to imagine themselves in the described situation when considering each question and making the decision.

After reading an information sheet and providing informed consent, the participants read a randomly selected decision. Then they read the two courses of action associated with the decision (i.e., we presented each course of action one at a time and in a counterbalanced order across participants) and selected which of these two courses of action they would most likely engage in, thus providing a proxy for *moral intent*. After selecting a course of action, they provided their moral intensity and judgment ratings for each of the two courses of action, as well as their moral awareness of the decision situation as a whole. They went through this sequence of actions for each of the remaining decision situations.

[2] Participants also rated their likelihood of utilizing each of the five *moral principles (i.e., care-*, *consequences-*, *rules-*, *self-interest-*, and *virtue-based)* identified as central by the CF Defence Ethics Program while trying to resolve the decision. Blais and Thompson (2008) summarized the results, so we will not discuss them further here.

3 Results

3.1 Overview

We report the results in three parts. As a manipulation check, we compared the mean moral awareness and intensity ratings associated with the non-ethical and military decisions via completely within-subjects analyses of variance (ANOVAs). Second, for exploratory, descriptive, purposes, we contrasted the mean moral intensity ratings and judgment scores associated with each response option within each military scenario via dependent-samples *t* tests. Third, we investigated the link between the differences in moral intensity ratings and judgment scores between options and the choice of an option within each military scenario via multiple regression analyses. We used a familywise significance level of .05 throughout.

3.2 Mean moral intensity and awareness ratings associated with the non-ethical and military decisions

We first sought to establish that the military decisions did indeed produce *greater* ratings on the moral intensity and awareness dimensions than did the non-ethical decisions. We performed 2 X 2 X 2 completely within-subjects ANOVAs on the mean moral intensity ratings. The within-subjects factors were the *Decision Type* (two levels: non-ethical and military ethical), *Scenario* (two levels: two scenarios per decision type, where we arbitrarily defined "Scenario 1" as the scenario with the lowest mean rating on the variable under consideration [e.g., social consensus], and "Scenario 2" as the scenario with the greatest mean rating on the variable under consideration), and *Option* (two levels: two options per scenario, where we arbitrarily defined "Option 1" as the option with the lowest rating on the variable under consideration and "Option 2" as the option with the greatest rating on the variable under consideration).

Note that we will not discuss the significant main effects of the Scenario and Option factors on the dependent variables, as they are not of great theoretical interest here, but the results are available from the first author upon request. Similarly, we will not discuss the two-way interaction effects that were significant (we did not find significant three-way interaction effects), as they were all ordinal in nature and did not preclude interpreting the significant main effects of Decision Type on the dependent variables. Again, all of the results are available from the first author.

The results of the ANOVA conducted on the mean *probability of effect* ratings showed that the ratings associated with the military scenarios (M = 5.29, SD = 0.42) were significantly higher than those associated with the non-ethical scenarios (M = 1.32, SD = 0.94), $F(1, 63) = 824.74$, $\eta^2 = .93$. Similarly, the results of the ANOVA conducted on the mean *magnitude of consequences* ratings revealed that the ratings associated with the military ethical scenarios (M = 4.98, SD = 0.94) were significantly *greater* than were those associated with the non-ethical scenarios (M = 1.15, SD = 0.30), $F(1, 63) = 957.16$, $\eta^2 = .94$. Finally, the results of the ANOVA conducted on the mean *social consensus* ratings revealed that, as well, the ratings associated with the military ethical scenarios (M = 3.77, SD = 0.71) were significantly *greater* than those associated with the non-ethical scenarios (M = 1.73, SD = 0.74), $F(1, 63) = 285.50$, $\eta^2 = .82$.

Table 1: Mean Moral Intensity Ratings by Decision Type and Scenario

Scenario	Decision Type			
	Non-Ethical		Military	
	M	*SD*	*M*	*SD*
Probability of effect				
Scenario 1	1.16_a	0.30	4.89_b	1.21
Scenario 2	1.48_a	0.69	5.70_b	1.13
Magnitude of consequences				
Scenario 1	1.06_a	0.16	4.51_b	1.37
Scenario 2	1.23_a	0.50	5.45_b	1.03
Social consensus				
Scenario 1	1.38_a	0.78	3.56_b	0.77
Scenario 2	2.09_a	1.03	3.98_b	1.12

Note. Means in the same row with different subscripts are significantly different at $p < .05$ according to the Holm[3] procedure.

Table 2: Mean Moral Intensity Ratings by Decision Type and Option

Option	Decision Type			
	Non-Ethical		Military	
	M	*SD*	*M*	*SD*
Probability of effect				
Option 1	1.16_a	0.30	5.15_b	1.26
Option 2	1.48_a	0.68	5.44_b	1.24
Magnitude of consequences				
Option 1	1.06_a	0.16	4.48_b	1.56
Option 2	1.23_a	0.51	5.48_b	0.99
Social consensus				
Option 1	1.56_a	0.74	3.25_b	0.96
Option 2	1.90_a	0.98	4.30_b	0.99

Note. Means in the same row with different subscripts are significantly different at $p < .05$ according to the Holm procedure.

We also conducted a 2 X 2 completely within-subjects ANOVA on the mean moral awareness ratings in order to establish that the military decisions did indeed produce *greater* moral awareness ratings than did the non-ethical decisions. The within-subjects factors were the *Decision Type* (two levels: non-ethical and military ethical) and *Scenario* (two levels: two dilemmas per type of dilemma, where we arbitrarily defined "Decision 1" as the dilemma with the lowest mean rating and "Decision 2" as the dilemma with the greatest mean rating on the variable under consideration). The results of the ANOVA showed that the mean moral awareness ratings associated with the military ethical scenarios ($M = 6.07$, $SD = 1.11$) were significantly

[3] The Holm procedure entails performing all pairwise mean comparisons (c) and ordering them by absolute t values, largest first. The alpha (α) level for the first comparison is αFW/c, for the second, αFW/(c - 1), for the third, αFW/(c - 2), and so on. We stop as soon as we fail to reject the null hypothesis.

greater than those associated with the non-ethical scenarios, (M = 1.54, SD = 0.82), $F(1, 63)$ = 609.00, η^2 = .91. The Decision Type-by-Scenario interaction effect was not significant.

Overall then, the military ethical dilemmas did indeed produce greater moral intensity and awareness ratings than did the non-ethical decision scenarios. Having confirmed that, we could confidently move on to investigating our specific research questions.

3.3 Mean moral intensity ratings and judgment scores associated with each option within each ethical decision

We next turned our attention to exploring more specifically the moral intensity and judgment ratings associated with each of the choice options within each of the military scenarios.

3.3.1 Reprimanding a subordinate

The private reprimand option generated significantly *greater* mean social consensus (i.e., inappropriateness) ratings than did the court-martial option, $t(63)$ = 3.05, d = 0.67. It generated *lower* mean ratings of the probability of effect and magnitude of consequences, as well as *lower* mean moral judgment scores than did the court martial option, but none of these mean differences reached statistical significance (see Table 3 for the cell means). In other words, despite perceiving somewhat lower probability of effect and magnitude of consequences associated with the private reprimand option, the participants rated this option as the more inappropriate, and somewhat less moral, choice relative to the court martial option. The proportion of our participants choosing to reprimand the subordinate (59%) was not significantly different from that of choosing to have her or him court-martialled (41%) however.

With respect to the moral dilemma concerning the war refugees, our results indicated that the option of letting the refugees into the camp was associated with significantly lower magnitude of consequences, greater social consensus (i.e., more socially acceptable), and greater moral judgment than was the option of turning the refugees away from the camp. It was also associated with a somewhat lower probability of effect than was turning the refugees away, although this effect did not reach statistical significance.

Table 3: Mean Moral Intensity Ratings and Judgment Scores (Reprimand Scenario)

Variable	Option			
	Reprimand privately		Relieve of command	
	M	*SD*	*M*	*SD*
Probability of effect	4.80_a	1.63	4.98_a	1.79
Magnitude of consequences	4.16_a	2.02	4.86_a	1.76
Social consensus	4.11_a	1.63	3.02_b	1.62
Moral judgment	4.32_a	1.39	4.59_a	1.43

Note. Means with different subscripts are significantly different at $p < .05$ according to the Holm procedure.

3.3.2 Handling refugees

Letting the refugees into the military camp generated significantly *lower* mean ratings of the magnitude of consequences, $t(63) = -4.32$, $d = -0.82$, and social consensus, $t(63) = -3.54$, $d = -0.63$, as well as significantly *greater* mean moral judgment scores, $t(63) = 7.50$, $d = 1.45$, than did turning them away from the military camp (see Table 4 for the cell means). This option also produced *lower* mean ratings of the probability of effect than did turning them away from the military camp, albeit not significantly so. Thus, the participants perceived a somewhat lower probability of effect and a significantly lower magnitude of consequences associated with letting the refugees into the military camp. Moreover, they perceived this option as the more appropriate and moral choice. The proportion of our participants choosing to let the refugees in (50%) was not significantly different from the proportion of participants deciding to turn the refugees away (50%) however.

Table 4: Mean Moral Intensity Ratings and Judgment Scores (Refugees Scenario)

Variable	Option			
	Let them in		Turn them away	
	M	*SD*	*M*	*SD*
Probability of effect	5.50_a	1.51	5.89_a	1.57
Magnitude of consequences	4.81_a	1.80	6.10_b	1.31
Social consensus	3.48_a	1.53	4.48_b	1.65
Moral judgment	5.04_a	1.45	3.01_b	1.35

Note. Means with different subscripts are significantly different at $p < .05$ according to the Holm procedure.

3.4 Regression analyses predicting differences in moral judgment scores from differences in moral intensity ratings

We next turned our attention to whether the differences in our participants' ratings of the moral intensity dimensions were related to the differences in their ratings of the morality of each option. We first looked at the pattern of pairwise correlations between the moral intensity difference ratings and judgment difference scores, and we then predicted the moral judgment difference scores by including the intensity difference ratings simultaneously in a multiple regression model.

The differences in the moral intensity ratings between the two options were indeed significantly correlated with the difference in the judgment scores between the two options, and this was true for both scenarios (see Table 5). In other words, how the participants perceived one option as compared to the other on the moral intensity dimensions was significantly correlated with how they judged its morality relative to the morality of the other option.

Table 5: Pairwise Correlations Between the Moral Intensity Difference Ratings and Judgment Difference Scores

Variable	Moral judgment	
	Reprimanding a subordinate	Handling refugees
Probability of effect	-.31	-.31
Magnitude of consequences	-.36	-.46
Social consensus	-.41	-.36

3.4.1 Reprimanding a subordinate

The regression model was significant, $F(3, 60) = 7.28$, $R^2 = .27$. The difference in social consensus ratings between the two options was a significant predictor of their difference in morality, $B = -0.29$, $SE(B) = 0.09$, $t(60) = -3.17$, $\beta = -.36$. Specifically, the *greater* the participants perceived the inappropriateness of the private reprimand option (as compared to the court-martial option), the *lower* they judged its morality (again, relative to the court-martial option).

3.4.2 Handling refugees

The regression model was also significant, $F(3, 60) = 7.13$, $R^2 = .26$. The difference in social consensus ratings between the two options was a significant predictor of their difference in morality, $B = -0.23$, $SE(B) = 0.12$, $t(60) = -2.01$, $\beta = -.24$, as was the difference in magnitude of consequences ratings, $B = -0.37$, $SE(B) = 0.13$, $t(60) = -2.86$, $\beta = -.40$. That is, the *more* inappropriate participants judged the option of turning the refugees away (as compared to letting them in), the *lower* they judged its morality (again, relative to letting them in). Similarly, the *greater* was the perceived magnitude of consequences associated with turning the refugees away (as compared to letting them in), the *lower* was its judged morality, relative to letting them in.

3.5 Regression analyses predicting choice from differences in moral intensity ratings and judgment scores

Building upon the previous set of analyses, we used hierarchical regression analysis in order to determine the contributions of the differences in moral intensity ratings and judgment scores between the two options to the choice of the preferred response to the moral dilemma. We first introduced the moral intensity difference ratings in the regression model (Step 1), followed by the judgement difference scores (Step 2), as predictors of the choice (i.e., Option 1 vs. Option 2). We followed this particular sequence in order to explore whether the moral judgment difference scores contributed to the choice above and beyond the intensity difference ratings. Given that our outcome variable was a dichotomy (i.e., whether the participants chose Option 1 or Option 2), we used logistic regression.

Again, by looking at the pattern of pairwise correlations, we see that the differences in the moral intensity ratings and judgment scores between the two options were significantly correlated with the choice, and this was true for both choices (see Table 6). In other words, how the participants perceived one option as compared to the other in terms of moral intensity and morality was significantly correlated with their choice.

Table 6: Pairwise Correlations Between the Choice of an Option and the Moral Intensity Difference Ratings and Difference Judgment Scores

Variable	Choice	
	Reprimanding a subordinate	Handling refugees
Magnitude of consequences	.54	.44
Probability of effect	.47	.41
Social consensus	.36	.39
Moral judgment	-.60	-.59

3.5.1 Reprimanding a subordinate

The regression model at Step 1 was significant, $\chi^2(3, N = 64) = 34.26$, 2LL = 52.20, with the differences in probability of effect, magnitude of consequences, and social consensus ratings being significant predictors of the choice, $B = 0.51$, $SE(B) = 0.22$, $Wald(1) = 5.24$, *odds ratio* = 1.67, $B = 0.43$, $SE(B) = 0.20$, $Wald(1) = 4.72$, *odds ratio* = 1.54, and $B = 0.42$, $SE(B) = 0.17$, $Wald(1) = 6.48$, *odds ratio* = 1.52, respectively. Specifically, the *greater* the participants perceived the probability of effect, magnitude of consequences, and inappropriateness associated with relieving the soldier of command as compared to reprimanding her or him privately, the *more* likely they were to choose the private reprimand option.

Step 2 contributed to the model above and beyond Step 1 in a significant manner, $\chi^2(1, N = 64) = 17.47$, 2LL = 34.72. While the difference in moral judgement scores was a significant predictor of the choice, $B = -1.19$, $SE(B) = 0.43$, $Wald(1) = 7.67$, *odds ratio* = .30 (i.e., the *lower* the judged morality associated with the court-martial option relative to the private reprimand option, the *more* likely the choice of the private reprimand option), the differences in probability of effect, magnitude of consequence, and social consensus ratings were not significant predictors of choice anymore.

3.5.2 Handling refugees

The regression model at Step 1 was significant, $\chi^2(3, N = 64) = 21.50$, 2LL = 67.23, with the difference in social consensus ratings being a significant predictor of choice, $B = 0.33$, $SE(B) = 0.16$, $Wald(1) = 4.19$, *odds ratio* = 1.39. Specifically, the *greater* the participants perceived the inappropriateness associated with turning the refugees away as compared to letting them in, the *more* likely they were to decide to let them in.

Step 2 contributed to the model above and beyond Step 1 in a significant manner, $\chi^2(1, N = 64) = 13.28$, 2LL = 53.95. While difference in moral judgement scores was a significant predictor of choice, $B = -0.68$, $SE(B) = 0.22$, $Wald(1) = 9.82$, *odds ratio* = .51 (i.e., the *lower* the judged morality of the option of turning the refugees away relative to letting them in, the *more* likely the decision to let them in), the difference in social consensus ratings was not a significant predictor of choice anymore.

4 Discussion

The goal of the analyses we undertook was to determine the extent to which the differences in the moral intensity dimensions and judgments of morality between two potential responses to a moral dilemma would guide the degree to which the participants would endorse an option (vs. the other) as their preferred way to deal with a moral dilemma. To this end, we adopted the moral and ethical decision making models of Rest (1986) and Jones (1991) concerning moral awareness, intensity, and judgment in the decision making process.

We first sought to demonstrate that our two military moral dilemmas would indeed trigger greater ratings of moral awareness among our participants than would two non-moral decisions. Our results revealed that this was the case. Similarly, the participants provided greater ratings of the moral intensity dimensions of probability of effect, magnitude of consequences, and social consensus for the military moral dilemmas than they did for the non-moral decisions. Beyond supporting our initial predictions, the direct comparison of these variables between the moral and non-moral decisions also act as a manipulation check, ensuring that our moral dilemmas did indeed entail greater moral intensity and provoked higher levels of moral awareness.

We next explored the moral intensity ratings and judgment scores of each of the two response options associated with each of the two military moral dilemmas. Concerning the disobedient subordinate dilemma, although the participants rated the probability of effect and magnitude of consequences as somewhat greater in the case of a court martial, they felt the private reprimand was a less socially acceptable, and a somewhat less moral, choice. Moreover, they were no more likely to choose the private reprimand over the court martial as their preferred or most likely response to the moral dilemma.

With respect to the moral dilemma concerning the war refugees, our results indicated that the option of letting the refugees into the camp was associated with significantly lower magnitude of consequences and social consensus (i.e., more appropriate), and significantly greater moral judgment than was the option of turning the refugees away from the camp. It was also associated with a somewhat lower probability of effect than was turning the refugees away, but this effect failed to reach statistical significance. Again, the percentage of our participants who selected turning the refugees away was not significantly different from that selected to let the refugees into the military camp.

The results of regression analyses showed that the differences in the respondents' ratings of the moral intensity dimensions were indeed related to the differences in their judgments of the morality of the options, and this was true for both moral dilemmas. In other words, how the participants perceived one option as compared to the other on the moral intensity variables was significantly related with how they judged its overall morality relative to the morality of the other option. More specifically, the less socially appropriate the respondents rated the private reprimand option relative to the court martial option, the lower they judged its morality relative to the court martial option. Similar results were evident in the refugees dilemma. However, in this case, the difference between the ratings of the magnitude of consequences occurring should the refugees be turned away than be let into the camp was also significantly associated with their difference in morality ratings.

Finally, the results of hierarchical regression analyses indicated that the differences in moral intensity ratings and judgment scores between the options were significant predictors of the choice of the preferred response to the moral dilemmas, although the difference in moral judgment ratings was a more consistent predictor of choice than were the differences in moral intensity ratings. In summary then, our analyses generally supported our contention that how the participants perceived one option as compared to the other in terms of moral intensity and morality was significantly related to whether they chose that option over the other.

It should be noted that while we do not address Rest's (1986) notion of moral motivation by name in our analyses, our participants made differential ratings of the different response options, which is consistent with the definition of moral motivation (i.e., the hierarchical ordering of response options in terms of which of the available response options is the most morally justifiable).

Clearly, in the current context, we could not readily assess moral character, that is, the persisting in moral action in the face of obstacles. This would have involved much more elaborate scenarios and choice options but is perhaps deserving of some attention in future research. The notion of moral character might be explored more closely using other research methodologies, for instance structured interviews, especially of military personnel who have faced moral dilemmas in their careers.

Moreover, since its introduction in 1985, note that other theorists, primarily in organizational psychology and marketing, have developed models that extend Rest's initial component model. Most of this work has focused on the inclusion of components that address social, organizational influences, as well as cultural norms (for example, see Ferrell & Gresham, 1985; Hunt & Vitell, 1986; Trevino, 1986).[4] Subsequent research has supported the relevance of these additional factors (see Hegarty & Sims, 1978; Vitell, Rallapalli, & Singhapakdi, 1993; Zey-Ferrell & Ferrell, 1982).

Given their organizational roots, it is not surprising that most of the additional variables explored in these expanded models are based on social and organizational factors. Yet there may be other environmental factors that, while perhaps not exclusive to the military, may be of unique importance to models of operational moral decision making in the military realm. For instance, time pressure, and the real effect of chronic stressors such as lack of sleep, and poor living conditions tend to be the particular concerns of military personnel. In general, the effects of these stressors and factors on moral and ethical decision making and behaviours is not well understood, although a recent study by Greene and colleagues (Greene et al., 2001) has demonstrated that cognitive load interferes with certain types of moral judgments. Further research on how acute and chronic stressors affect military moral decision making seems certainly warranted.

A word of caution is required here however. As compelling as it may be to explore them, unless the sample sizes are sufficiently large enough to provide reliable results, these additional variables need to be employed in a selective manner. As well, more complex models run the risk of being so complicated as to render the results difficult to interpret. Researchers in the field will

[4] Note however, that social and cultural norms are at least touched upon by aspects of the moral judgment variable used here, specifically asking respondents how well each option was described as being 'Acceptable to my family', 'Culturally acceptable' and 'Traditionally acceptable'.

always need to make considered tradeoffs in conducting research in this area that balances scientific rigour and comprehension with ecological validity.

It is interesting that there were no significant differences in the percentage of our sample who selected one response option over the other for either dilemma. Thus, about equal numbers of respondents would have opted for a private court martial versus a private reprimand and, perhaps more remarkably, the same percentage of respondents indicated that they would choose the response option of turning refugees away from the camp as did those who would have let the refugees in. The fact that there was no clear answer perhaps most evocatively reflects the complex nature of moral dilemmas and moral decision making.

One of the strengths of this work in terms of defence science is its use of operational military dilemmas. Indeed, to our knowledge the present work represents one of the first exploratory studies designed to address the moral dilemmas that are drawn from the recent operational experiences of military personnel. Based on our current exploratory results, the study and analyses should be replicated with larger sample sizes, most particularly employing military personnel. For instance, it would be interesting to see if military personnel respond to the dilemmas and response options in the same way as did our current sample. Further, it would be interesting to determine if any group differences emerge within military samples, for instance military recruits or cadets as they pass through their initial military training, or among more experienced personnel based upon the number or location(s) of their deployment(s). There also could conceivably be differences if a similar study was conducted across military personnel from different nations, especially if the additional social/organizational/cultural factors implicated in moral and ethical decision making models subsequent to Rest's original model are valid.

Conclusion

The end of the Cold War has presented militaries with greater complexity and ambiguity than ever before. For instance, in the asymmetrical threat environments that are often a defining feature of contemporary operations, it can be extremely difficult to distinguish combatants from civilians. Under the Joint, Interagency, Multinational and Public (JIMP) framework, the CF works in increasing coordination with other agencies and organizations that may have very different goals, mandates and primary missions. Moreover, Canada continues to be active in coalition operations with other militaries that may adhere to different rules of engagement (ROEs). Finally, there is an increasing recognition that the actions of even junior enlisted personnel can have significant strategic effects (Liddy, 2005). Together, these factors can increase the complexity of military missions and also increase the likelihood that CF personnel may encounter ethical dilemmas. Thus, even greater skills in judgment, decision making, communication, and action will be required for military personnel at all levels to effectively address these dilemmas. Our current results suggest that differences in key aspects of the moral and ethical decision making process influence the ultimate preferred response to military moral dilemmas. Although the current results are based on a community sample and require replication with military samples, we believe the current results speak to fundamental moral and ethical decision making processes, and that research such as this will be increasingly important in military ethics.

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Appendix A

Choosing toothpaste

Imagine that you are almost out of toothpaste. You haven't gone a day without brushing your teeth for at least ten years. This situation is unacceptable. You need to make sure that you can get a good teeth brushing tomorrow morning, and tonight you may use up the remaining toothpaste. You're on a tight budget, but toothpaste is a must.

You go to the drug store and look for your regular brand of mint toothpaste. When you find it, you see that it costs $3.50 per tube. You notice that there's generic mint toothpaste that costs $2.00 per tube. You've never tried the generic brand before.

What do you do?

a) I purchase the generic toothpaste.

b) I stick with my regular toothpaste

Enjoying the weather

Imagine that it's a beautiful day outside. It’s Saturday and you've had a very stressful work week. You are thrilled with the weather and that you have the entire day to relax and enjoy yourself in the outdoors. You decide to either go for a beautiful bicycle ride along the city's river bike-path where you can see the water and the skyline or else perhaps to go for a stroll to your local park for a calming two mile walk around the pond.

What do you do?

a) I go for the bike ride.

b) I go for a walk around the pond.

Appendix B

Supervising a soldier who disobeys orders

Imagine that you are the commander of a unit on peacekeeping duty in a foreign country. There are two factions in this country, and you are trying to keep them from fighting. Your orders are to avoid fighting or siding with either faction.

One of your subordinates is somebody who has been good friend for many years. Recently, he has been getting sympathetic to one of the factions. One day, you find out that he has deployed soldiers into this faction's area for protection. This is directly contrary to your orders and to your mission. He needlessly put soldiers' lives at risk, in an immediate zone of danger. He probably felt strongly that he was saving civilians' lives, and was hoping that you wouldn't find out about it. In a case like this, military rules say that he should be relieved of command and sent for a court-martial. However, you could reprimand him privately instead.

What do you do?

a) I reprimand him privately

b) I relieve him of command and have him court-martialed.

Handling wartime refugees

Imagine that you are the commander of a unit on peacekeeping duty in a foreign country. There are two factions in this country, and you are trying to keep them from fighting. Your orders are to avoid fighting or siding with either faction.

One of the factions starts to shell the town you are in. Thousands of bombs fall within 36 hours. Suddenly, hundreds of people from the other faction are outside your camp, trying to get away from the bombing. You contact headquarters for permission to let them in and the response is strict: don't let them in. The concern is that our country must maintain impartiality to be effective in keeping the peace: letting people into our camp makes it look as if we are supporting their faction. Also, if we let a few in, thousands more will try to get in as well. We don't have enough resources to be able to keep them all safe, well-fed, and free from diseases.

What do you do?

a) I let them in.

b) I turn them away.

Appendix C

List of questionnaire items

Components of moral intensity (the rating scales ranged from 1 to 7)

- Most people would consider this option to be: *Appropriate -- Inappropriate*
- The possible harm resulting from this option would be: *Minor -- Severe*
- The chances of any negative consequences occurring as a result of this option are:
- *Not at all -- Very likely*

Measure of moral judgment (the rating scales ranged from *Not at all* = 1 to *Very much* = 7)

How well do the following characteristics describe this option?

- Just
- Fair
- Morally Right
- Acceptable to my family
- Culturally acceptable
- Traditionally acceptable
- Does not violate an unspoken promise
- Does not violate an unwritten contract

Measure of moral awareness (the rating scale ranged from *Not at all* = 1 to *Very much* = 7)

- To what extent does this decision involve ethics and morality?

List of acronyms

CF	Canadian Forces
DRDC	Defence Research and Development Canada
DEP	Defence Ethics Program
DND	Department of National Defence
ARP	Applied Research Project
fMRI	functional Magnetic Resonance Imaging
ANOVA	Analysis of Variance
M	Mean
SD	Standard Deviation
JIMP	Joint, Interagency, Multinational and Public
ROEs	Rules of Engagement

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(U) Given the unique moral responsibility and obligations of military duty, understanding the nature and factors governing the moral decision−making process and behavior of military personnel, especially during operations, is of paramount importance. In the current study, we apply the seminal moral and ethical decision−making models of Rest (1986) and Jones (1991) to explore the moral decision−making process of 64 participants (34 women and 30 men) who participated in an on−line survey at the Centre for Decision Sciences at Columbia University. Following the presentation of each of two military moral dilemmas drawn from the operational experiences of senior CF commanders and two potential responses to that dilemma, the participants responded to a series of questions assessing moral awareness, intensity, and judgment for each of the response options. They also selected a preferred response option for each military moral dilemma. Our results showed that they were no more likely to choose one response option over the other in either moral dilemma. The results of regression analyses also showed that differences in how the participants perceived one option as compared to the other on the moral intensity variables predicted how they judged its morality relative to that of the other option. Finally, the results of hierarchical regression analyses indicated that the differences in moral intensity ratings and judgment scores were significant predictors of the preferred responses to the moral dilemmas, although the differences in moral judgment scores were more consistent predictors of choice than were the differences in intensity ratings. We conclude with a discussion of the implications of these results and provide suggestions for future research in the area.

(U) Vu la responsabilité et les obligations morales uniques qu'implique le service militaire, il est indispensable de comprendre les fondements et les facteurs de la prise de décision morale et du comportement du personnel militaire, particulièrement dans le contexte des opérations. Durant cette étude, nous appliquons les modèles pertinents de prise de décision morale et éthique de Rest (1986) et de Jones (1991) pour explorer le processus de la prise de décision morale. Soixante−quatre participants (34 femmes et 30 hommes) ont collaboré à une enquête administrée en direct au Centre for Decision Sciences de l'Université Columbia. Après la présentation de deux dilemmes moraux tirés de l'expérience opérationnelle de commandants supérieurs des FC et de deux options d'intervention possibles face à chaque dilemme, les participants ont répondu à une série de questions visant à évaluer leur conscience morale, intensité morale et jugement moral par rapport à chacune des options d'intervention. Ils ont également choisi une option privilégiée d'intervention pour chaque dilemme moral militaire. Les résultats indiquent que les participants n'ont pas eu plus tendance à choisir une option d'intervention plutôt qu'une autre pour l'un ou l'autre des dilemmes moraux. Selon les analyses de régression, la façon dont les participants percevaient une option comparativement à l'autre (c.−à−d., d'une manière plus positive ou plus négative) sur l'échelle de l'intensité morale avait une corrélation significative avec leur jugement par rapport à sa moralité, relativement à la moralité de l'autre option, particulièrement dans le cas du consensus social. Enfin, les résultats des analyses de régression hiérarchique explorant l'apport relatif des évaluations de l'intensité morale et du jugement moral à la sélection des options indiquent que les différences au niveau de l'intensité morale et du jugement moral avaient un rôle à jouer dans la réaction choisie face aux dilemmes moraux, même si la différence au niveau de l'évaluation du jugement moral était une variable explicative plus stable du choix effectué. Pour conclure, on discute de la portée de ces résultats et l'on propose des sujets de

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(U) decision making, moral dilemmas; Canadian Forces; moral intensity; moral judgment

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